Installation Instructions

SINGLE STAGE HEAT/COOL THERMOSTAT

Please read these instructions completely before attempting installation.

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WARNING

Before installing thermostat, turn off all power to unit. There may be more than one power disconnect. Electrical shock can cause personal injury or death.

Improper wiring or installation may damage thermostat. Wiring must conform to local and national electrical codes.

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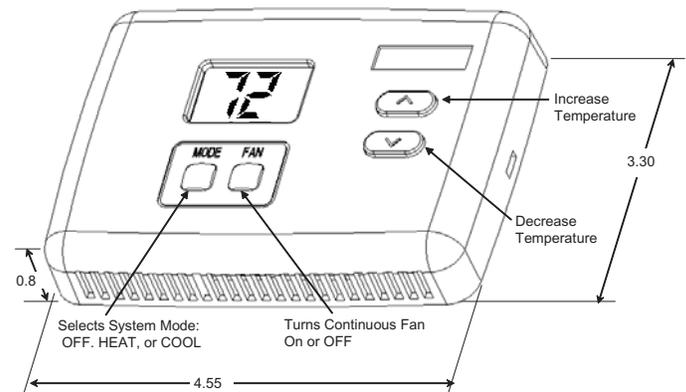
INSTALLATION CONSIDERATIONS

The thermostat is a wall mounted, low-voltage thermostat, which maintains room temperature by controlling the operation of a heating and air conditioning system. Batteries are not required; temperature and mode settings are preserved with the power off.

I. THERMOSTAT LOCATION

Thermostat should be mounted:
  - Approximately 5 ft. (1.5m) from floor.
  - Close to or in a frequently used room, preferably on an inside partitioning wall.
  - On a section of wall without pipes or duct work.

Thermostat should NOT be mounted:
  - Close to a window, on an outside wall, or next to a door leading to the outside.
  - Exposed to direct light and heat from a lamp, sun, fireplace, or other temperature-radiating object which may cause a false reading.
  - Close to or in direct airflow from supply registers and return-air grilles.
  - In areas with poor air circulation, (behind a door or in an alcove.)

II. INSTALL THERMOSTAT

1. Turn off all power to unit.
2. If an existing thermostat is being replaced:
    A. Remove existing thermostat from wall.
    B. Disconnect wires from existing thermostat, one at a time. Be careful not to allow wires to fall back into the wall.
    C. As each wire is disconnected, record wire color and terminal marking.
    D. Discard or recycle old thermostat.

    NOTE: Mercury is a hazardous waste and MUST be disposed of properly.

3. Separate the thermostat and back plate.
4. Route thermostat wires through hole in back plate. Level back plate against wall (for aesthetic value only - thermostat need not be leveled for proper operation) and mark wall through 2 mounting holes.

5. Drill two 3/16-in. mounting holes in wall where marked. (Note: Mounting holes on back plate are designed to fit on a horizontal J-box).
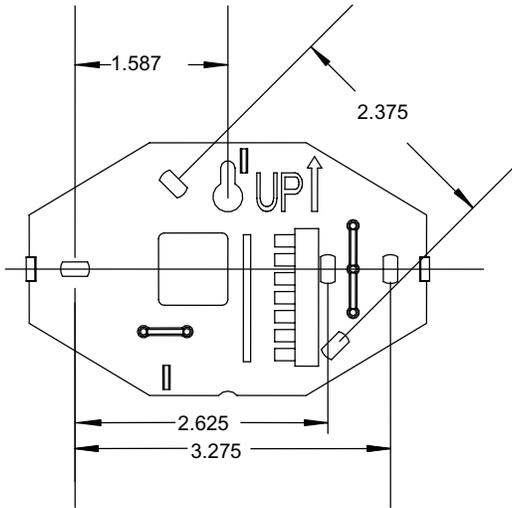

6. Secure back plate to wall with 2 anchors and screws provided making sure all wires extend through hole in back plate.

7. Connect wires to proper terminal of the connector block

8. Push any excess wire back into wall. Excess wire inside the thermostat plastic case can interfere with proper air flow across the temperature sensor. Seal hole in wall to prevent air leaks. Leaks can affect operation.

9. Install thermostat on back plate.

10. Turn on power to the unit.

On initial power up, the LCD readout will display σP.

WIRING DIAGRAMS

NOTE: All excess wire should be pushed back into the wall as far as possible. Excess wire inside the thermostat plastic case may interfere with the air flow across the temperature sensor.

SINGLE STAGE HEAT/COOL WIRING

Thermostat   Unit Terminal Strip

HEAT	W		W
COOL	Y		Y
FAN	G		G
24 VAC HOT	R		R
24 VAC COMM	C		C
Reversing Valve	B		B

Connection to "B" terminal required on Heat Pump models
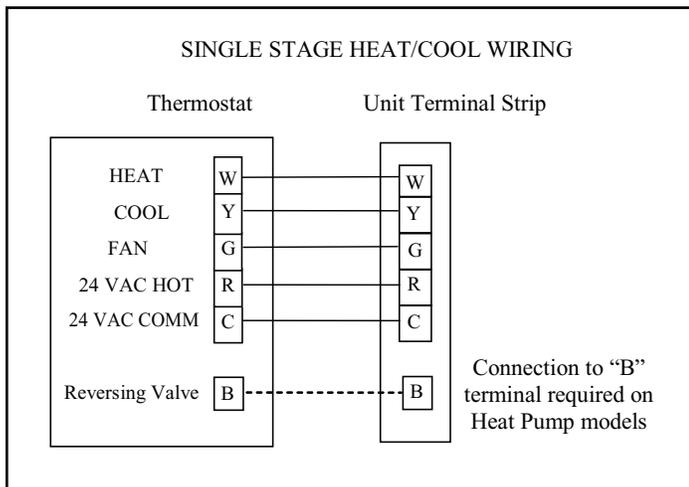
III CHECK THERMOSTAT OPERATION

1. Fan Operation
A. Press fan button, starting fan operation. Fan icon turns on.
B. Press Fan button, stopping fan operation. Fan icon turns off.

2. Heating Operation
A. Press and Release MODE button until HEAT is displayed.
B. Press up button until LCD readout reads 10 degrees above room temperature. Heating system should begin to operate within 5 minutes.

3. Cooling Operation
A. Press and Release MODE button until COOL is displayed
B. Press down button until LCD readout reads 10 degrees below room temperature. Cooling system should begin to operate within 5 minutes.

IV. THERMOSTAT OPERATION

1. TEMPERATURE DISPLAY
The thermostat will display room temperature until the UP or DOWN button is pressed. The word SET appears when these buttons are pressed and the current set point is displayed. If no buttons are pressed for 5 seconds, the display will change back to show room temperature.

2. TIMEGUARD TIMER
A 5-minute timeguard is built into the thermostat immediately upon power up, and any time the compressor turns off. The compressor will not turn on until the timeguard has expired. Pressing UP and FAN buttons simultaneously will override the timeguard for 1 cycle.

3. CYCLE TIMER
In normal heating and cooling operation the thermostat will not allow more than 4 equipment cycles per hour (or 1 cycle every 15 minutes). Both the Y and W outputs have a 15-minute timer that starts counting down when the output is turned on, (e.g., if Y output is turned on for 9 minutes and then satisfies, it cannot turn back on for another 6 minutes regardless of demand). However, pressing UP and FAN buttons simultaneously or changing the set point will override the timer for 1 cycle.

4. MINIMUM ON TIMER
Once the equipment has turned on, it will remain on for a minimum of 3 minutes regardless of demand. However, the equipment can turn off in less than 3 minutes if a change in set point, or a change in mode occurs.

5. ERROR MESSAGES
E4 will be displayed if the thermostat has an internal memory failure. If E4 appears, replace the thermostat.
- - (two dashes) will be displayed if the temperature cannot properly read the room temperature. If - - appears, replace the thermostat.

V. THERMOSTAT CONFIGURATION

This thermostat has been carefully configured at the factory to provide optimum operation for most installations. The settings programmed into it at the factory should NOT be changed unless determined to be absolutely necessary by a qualified HVAC contractor.

VI. CHANGING THERMOSTAT CONFIGURATION

If it has been determined that re-configuration of the thermostat is required, the following instructions will assist the professional HVAC installer in accomplishing this task:

While in configuration mode, three option choices can be made:

- *A* Anticipator Value Adjustment
- *d* Display temperature Fahrenheit/Celsius Selection
- *oF* Offset Adjustment for Room Temperature
- *Cr* Cycle rate. Maximum number of cycles per hour

TO ENTER THE CONFIGURATION MODE:

Press and hold the FAN button for approximately 10 sec until room temperature disappears and the display reads "*A*". You are now in the configuration mode.

NOTE: If the FAN button is pressed again or if no button is pressed for 2 minutes, the thermostat will exit the configuration mode and return to normal operation. To re-enter the configuration mode, the FAN button must be pressed and held for 10 sec. again.

WHILE IN CONFIGURATION MODE, THE FOLLOWING OPTIONS ARE AVAILABLE:

A. ANTICIPATOR - Value Adjustment

This adjustment controls the sensitivity and cycle rate of the thermostat. Higher numbers decrease the sensitivity and slow the cycle rate. Lower numbers increase the sensitivity and increase cycle rate. However, a limiting feature will not allow more than 4 equipment cycles per hour, regardless of setting. Values can range from 1 to 3. Factory default setting is 2. This default selection will provide optimum performance in nearly all installations. Try it first. Do not change setting unless there is evidence of need to do so. Unlike conventional anticipators, this setting is not determined by current draw. There is no need to measure, know, or compensate for current.

TO ADJUST:

1. Enter configuration mode (if not already there).
2. Use up and down buttons to display *A*
3. Press MODE button once to display current value.
4. Use up and down buttons to move between values.
5. Press MODE button to return to *A*. Up and down buttons now move between option choices *A*, *d-*, etc. or press FAN button to exit configuration mode.

d. FAHRENHEIT/CELSIUS Selection

This selection operates the thermostat in either Fahrenheit or Celsius.

TO SELECT:

1. Enter configuration mode (if not already there).
2. Use up and down buttons to display *d*
3. Press MODE button once to display current selection of *F* or *C*.

4. Use up and down buttons to change between *F* and *C*.
5. Press MODE button to return to *d*. Up and down buttons now move between option choices; or press FAN button to exit configuration mode.

oF. ROOM TEMPERATURE OFFSET ADJUST Selection

The selected number is the number of degrees, plus or minus, which will be added to the actual temperature. The numbers can range between -5 and +5. Factory default is 0. This adjusted value will be used as actual temperature for both display and control action. The effect is that a positive number selection will make the room temperature lower, and vice versa. The thermostat is calibrated within an accuracy of plus or minus 2 degrees when shipped from the factory; this adjustment will provide the best accuracy when set to 0.

TO SELECT:

1. Enter configuration mode (if not already there).
2. Use UP and DOWN buttons to display *oF*.
3. Press MODE button once to display offset value.
4. Use UP and DOWN buttons to select a value between -5 and 5.
5. Press MODE button to return to *oF*. UP and DOWN buttons now move between option choices; or press FAN button to exit configuration Mode.

Cr. CYCLE RATE Selection

This selection selects the cycle rate maximum in cycles per hour.

TO SELECT:

1. Enter configuration mode (if not already there).
2. Use up and down buttons to display *Cr*
3. Press MODE button once to display current selection *3* to *6*.
4. Use up and down buttons to change.
5. Press MODE button to return to *Cr*. Up and down buttons now move between option choices or press FAN button to exit configuration mode.

oP. OPERATING MODE – H/C or HP operation

The selected mode (H/C or HP) will operate the thermostat as a Heat Cool or as a Heat Pump thermostat.

TO SELECT:

1. Enter configuration mode (if not already there).
2. Use UP and DOWN buttons to display *oP*.
3. Press MODE button once to display operating mode.
4. Press UP and DOWN buttons to change between *HC* and *HP*.
5. Press MODE button to return to *oP*. UP and DOWN buttons now move between option choices; or press FAN button to exit configuration Mode.

NOTE: After changing *any* thermostat configuration settings, **ALWAYS** re-check the thermostat in **ALL** modes to verify proper operation.

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